HUMIDITY TEMPERATURE METER

INSTRUCTION MANUAL

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1. SAFETY INFORMATION

Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual, otherwise, the protection provided by the meter may be impaired.
With proper use and care, your digital meter will provide you satisfactory service for years.

1.1 PRELIMINARY

1.1.1 When the meter is delivered, check that it has not been damaged in transit.

1.1.2 When poor condition under harsh preservation or shipping conditions caused, inspect and confirm this meter without delay.

1.2 DURING USE

1.2.1 Operate the meter under the condition of stated temperature and humidity.

1.2.2 If any faults or abnormalities are observed, the meter can not be used any more and it has to be checked out.

1.2.3 Please do not store or use meter in areas exposed to direct sunlight, high temperature, humidity or

condensation.

1.2.4 Don't touch or manipulate the sensor.

1.2.5 Don't expose the sensor to direct light, this causes a false reading.

1.2.6 Don't expose the sensor to static electricity.

1.2.7 Never dip the sensor directly in the water or impregnant.

1.3 SYMBOLS

CE Comply with EMC

⚠ Important safety information, refer to the operating manual.

1.4 MAINTENANCE

1.4.1 Repairs or servicing not covered in this manual should only be performed by qualified personnel.

1.4.2 If it exists dust on the sensor, use clean air to blow it away or use alcohol to scrub it away lightly. Do not use other chemical impregnant for scrubbing.

1.4.3 Do not use abrasives or solvents on the meter, use a damp cloth and mild detergent only.

1.4.4 Always set the power switch to the OFF position when the meter is not in use.

1.4.5 If the meter is to be stored for a long period of time, the batteries should be removed to prevent damage to the unit.

2. DESCRIPTION

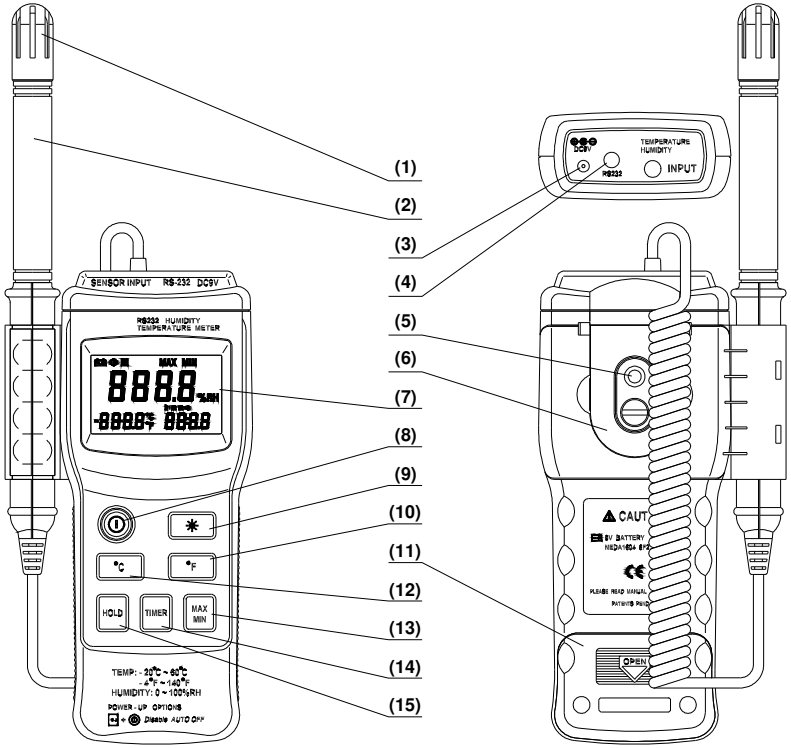
- This meter is a digital Humidity/Temperature meter for use a polymer capacitive and semiconductor sensor.
- This meter is a portable professional measuring instrument with large LCD and back light for easily reading.
- This meter can be connected with the computer for large recording of measuring data, analysis and printing, etc.
- This meter has function of data hold.
- This meter has function for measurement of MAX/MIN value.
- When using, it can show ranges engineering unit enunciators measuring results.
- This meter has function of auto power off.
- Low battery indication are provided.

2.1 NAMES OF COMPONENTS

(1) Dust mask

(2) Sensor probe

(3) AC power adapter connector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SENSOR INPUT RS-232 DC9V
RS232 HUMIDITY
TEMPERATURE METER
MAX MIN
%RH
HOLD
TIMER
MAX
MIN
°C
°F
TEMP: -20°C ~ 60°C
-4°F ~ 140°F
HUMIDITY: 0 ~ 100%RH
POWER - UP OPTIONS
Disable AUTO OFF
TEMPERATURE
HUMIDITY
DC9V
RS232
INPUT
CAUT
OPEN

(4) **RS-232** Digital output connector
(5) Tripod connector
(6) Hang Ring
(7) LCD display
(8) "⏻"➞ON/OFF button
(9) "☀"➞Back light button
(10) "℉"➞Fahrenheit control button
(11) Battery cabinet cover
(12) "℃"➞Centigrade control button
(13) "**MAX/MIN**"➞MAX, MIN function control button
(14) "**TIMER**"➞Timer display button
(15) "**HOLD**"➞HOLD button

2.2 BUTTONS ELUCIDATION

- ⏻ Button

  This Button is used to the switch of power.

- ☀ Button

  This button is used to the switch of back light.

- ℃ Button

  This button is used to transform ℃ range.

- ℉ Button

  This button is used to transform ℉ range.

- **HOLD** Button

  This Button is used to the switch of data hold.

- **TIMER** Button

  This Button is used to the switch of timer.

- **MAX/MIN** Button

  This Button is used to the switch of maximum value and minimum value measure.

2.3 SYMBOL DEFINITION

℃ Centigrade indication.

℉ Fahrenheit indication.

%RH Relative Humidity indication.

MAX The Maximum value is displayed.

MIN The Minimum value is displayed.

This indicates auto power off is enabled.

H This indicates that the display data is being held.

h:m hour and minute

m:s minute and second

The battery is not sufficient for proper operation.

3. SPECIFICATIONS

Accuracy is specified for a period of year after calibration and at 18℃ to 28℃（64℉ to 82℉） with relative humidity to 75%.

3.1 GENERAL SPECIFICATIONS

3.1.1 Numerical Display: 4 digital Liquid Crystal Display.

3.1.2 Measuring method: Dual-slope integration A/D converter

3.1.3 Temperature modulus: < (0.1 x Accuracy) /℃

3.1.4 Response Time: Humidity→ 75 sec. In slowly moving air

Temperature→ 40 sec. in slowly moving air

3.1.5 Signal Output: RS-232 Data Output

3.1.6 Operating Environment: Altitude up→ to 2000 meters.

Humidity→ 0 to 90%RH (non-condensing).

Temperature→ 0℃~50℃, 32℉~122℉ (non-condensing).

3.1.7 Storage Environment: Humidity→ 0 to 80%RH (non-condensing)

Temperature→ -10℃~60℃, 14℉~140℉ (non-condensing)

3.1.8 Power Requirements: Battery→ One 9V battery 006p or IEC 6F22 or NEDA1604

AC adapter→ 9VDC /30mA minimum Plug Diameter: Ø 3.5 mm x 1.35mm

3.1.9 Low Battery Indication: '⊟' displayed

3.1.10 Dimension: Meter→ 183(L)x 74(W)x 33(H)mm; 7.2(L)× 2.9(W)x 1.3(H)inch

Sensor Probe→ 208(L)x 15(D)mm; 8.2(L)x 0.6(D)inch

3.1.11 Weight: Approx.330g

3.2 ELECTRICAL SPECIFICATIONS

Circumstance Temperature: 23±5℃, Relative Humidity: < 75%

3.2.1 Humidity sensor: HIH-3610（Honeywell）

3.2.2 Temperature sensor: LM335Z（National Semiconductor Corporation）

	Test Conditions	Parameter
Operating Output Voltage	T_C=25℃, I_R=1mA	2.98V
Output Voltage Temperature Coefficient		10mV/℃

3.2.3 Humidity

Range	Resolution	Accuracy
0 ~ 100%RH	0.1%RH	±2.5%RH at 25℃

3.2.4 Temperature

Range	Resolution	Accuracy
-20℃~ +60℃	0.1℃	± 0.7℃
-4℉ ~ +140℉	0.1℉	±1.4℉

4. OPERATING INSTRUCTION

4.1 POWER-UP

Press the "⏻" button to turn the Humidity Temperature Meter ON or OFF.

4.2 HUMIDITY MEASUREMENT

For measurement, place the sensor probe in the tested environment.

NOTE:

- Measurement Range: 0%~100%RH
- Operating Environment: Relative humidity: 0 to 85%RH, Temperature: 0℃~40℃, 32℉~104℉ (without dew).

4.3 TEMPERATURE MEASUREMENT

For measurement, place the sensor probe in the tested environment.

NOTE:

- Measurement Range: -20℃~ +60℃，-4℉~ +140℉。
- Operating Environment: Relative humidity: 0 to 85%RH, Temperature: 0℃~40℃, 32℉~104℉ (without dew).

4.4 SELECTING THE TEMPERATURE SCALE

When the meter was first power on, the default scale setting is set at Celsius℃ scale. The user may change it to Fahrenheit ℉ by pressing "**℉**" button and vice versa to Celsius by pressing "**℃**" button.

4.5 MAX/MIN MEASUREMENT:

4.5.1 When one press the "**MAX MIN**" button the meter will enter the MAXIMIN mode. Under this mode the maximum value, minimum value is kept in the memory simultaneously and updated with every new data. When the MAX symbol is display, the Maximum is shown on the display.

4.5.2 Press "**MAX MIN**" again, then the MIN symbol is on the display and also the minimum reading.

4.5.3 Press "**MAX MIN**" again, MAX, and MIN will blink together. This means that all these data is updated in

the memory and the reading is the present temperature and humidity.

4.5.4 Press "**MAX MIN**" again, MAX will go back. One may press "**MAX MIN**" to circulate the display mode among these options.

NOTE:

When the meter is under "MAX MIN" operation, "℃", "℉" button are disabled. (when you press "℃", "℉" button in "**MAX MIN**" mode, there will be two continuous beep.) To exit the MAX/MIN mode, one may press and hold "**MAX MIN**" for 2 seconds.

4.6 READ HOLD

The user may hold the present reading and keep it on the display by pressing the "**HOLD**" button. When the held data is no longer needed, one may release the data-hold operation by pressing "**HOLD**" button again.

NOTE:

When the meter is under Data Hold operation, the "**MAX MIN**" and "℃", "℉" button are disabled. (when you press "℃", "℉" and "**MAX MIN**" button in HOLD mode, there will be two continuous beeps.)

4.7 TIMER OPERATION

One may start the timer by press the "**TIMER**" button. The counting can be stopped or continued by pressing it again.

When the counting exceed 59min 59sec, the time scale will be changed to hours and minutes. The counting can be reset by press and hold "**TIMER**" button for 2 sec.

4.8 BACK LIGHT

If the light is dark to make the reading difficult when measuring, you can press "☀" button to open the back light which will last for 15 sec. You can close it up at any time once press "☀" button again.

NOTE:

- LED is the main source of back light. Its working current is large, often use back light will shorten the battery life, you'd better not to use the back light so frequently unless it's necessary.
- When the battery voltage is less than 7V, it will show "🔋". But if you use back light at the same time, maybe "🔋" will come up even if the battery voltage is more than 7V, because the working current is higher and the voltage will decline. (When "🔋" shows, the accuracy of the measurement can not be assured.)

You need not replace the battery. When you use normally (back light is not using), "🔋" will not show up. You need replace it till "🔋"show again.

4.9 AUTO POWER OFF

By default, when the meter is powered on, it is under auto power off mode The meter will power itself off after 30 minutes if no key operation and no RS232 communication. Combination at power on can disable auto power off.

One may press and hold "**HOLD**" button and then power on the meter and there will be two successive beeps to indicate that auto power off is disabled and the ↻ will not show up.

4.10 DIGITAL OUTPUT

The Digital Output is a 9600bps N 81 serial interface.

4.11 BATTERY REPLACEMENT

4.11.1 If the sign "🔋" appears on the LCD display, it indicates that the battery should be replaced.

4.11.2 Turn the unit off. Remove the battery cover.

4.11.3 Replace the exhausted battery with a new one.

4.11.4 Put the battery cover as its origin.

4.12 USE THE TRIPOD CONNECTOR

4.12.1 If needed, the meter can be fixed on the tripod.

4.12.2 The meter also can be hanged up for use.

5. PCLink (ENCLOSED SOFTWARE)

5.1 ILLUMINATION FOR INSTALLATION

Connect software PCLink to your PC, then connect its interface to the meter for use.

- **MINIMUM HARDWARE REQUIREMENTS**

  486-100MHz minimum or equivalent PC, 16MB memory, 5MB hard disk space minimum.

- **OPERATING SYSTEM REQUIREMENTS**

  Win95/Win98 / NT4.0 or later 32 bit operating system.

- **INSTALLATION**

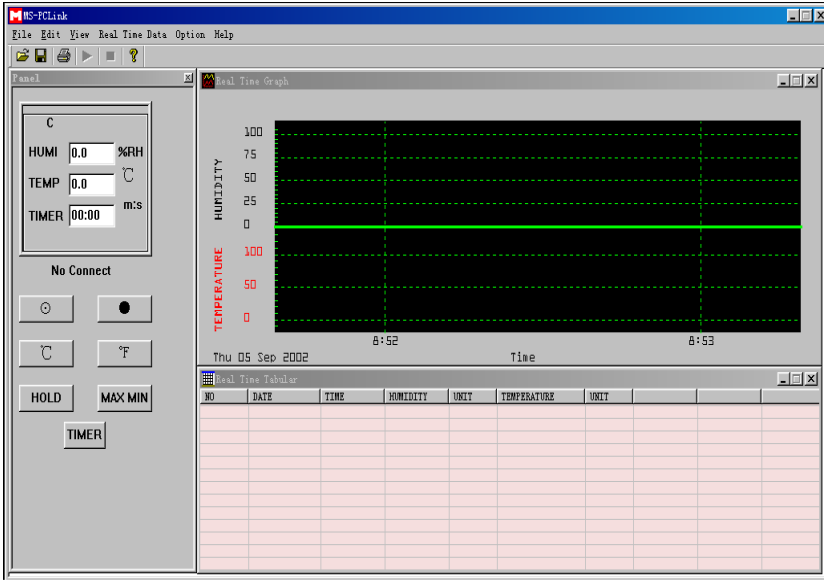
  Insert the SETUP floppy disk into computer. Select run from the TaskBar start menu. type “a：\PCLink.exe”, then press enter key, and follow the prompts. Click “PCLink” program in program group from TaskBar start menu to run the program, refer to **HELP** for detailed instruction.

5.2 RUN PCLink

Click “PCLink” program in program group from TaskBar start menu to run the “ PCLink ” program.

MENU and

TOOLBAR→



Both-Way

Control Window→

←Realtime Data

Graph Window

←Realtime Data

Table Window

5.3 Realtime data graph window and Realtime Table window

Click ▶, then PCLink will collect data of the meter on graph window and table window in realtime sampling rate time. You can input new sampling rate value on sampling rate edit label (Click **Option**, Select **Sample Rate**).

5.4 Refer to instruction for other operation on our Web. (HELP on MENU)

6. ACCESSORIES

6.1 SUPPLIED WITH THE MULTIMETER

(1)	Battery: 9V, NEDA 1604 or 6F22	One piece
(2)	Sensor Probe Holder	One piece
(3)	Carrying bag	One piece
(4)	Operating Manual	One piece

6.2 OPTIONAL ACCESSORIES

(1)	PCLink	3.5” Floppy Disk	One piece
(2)	Interface line		One piece
(3)	AC adapter		One piece